ABSTRACT OF THE DISCLOSURE

A system and method for interfacing a brain with a machine. An exemplary embodiment of the present invention employs a vascular approach in which one or more nano-electrodes are

5   deployed in vasculature having a close geometric relationship with proximal innervation. Each nano-electrode is preferably deployed in a blood vessel so that its sensing end is at or near a nerve passing close to or intersecting the blood vessel. The sensing end of each nano-electrode is adapted so as to be carried along in the blood stream so as to position the sensing end at a desired point within the blood vessel. An array of nano-electrodes of varying lengths can be

10   used to monitor multiple nerves or neurons along a blood vessel.